1042-20-75 **Gilbert Baumslag** (gilbert@groups.sci.ccny.cuny.edu), Department of Computer Science NAC 8/206, The City College of New York, 160 Convent Avenue, New York, NY 10031, **Charles F. Miller** (c.miller@ms.unimelb.edu.au), Department of Mathematics and Statistics, University of Melbourne, Melbourne, Victoria 3010, Australia, and **Gretchen Ostheimer*** (Gretchen.Ostheimer@hofstra.edu), Department of Computer Science, Hofstra University, Hempstead, NY 11549. *Intersections in Metabelian Groups.* Preliminary report.

The class of finitely generated metabelian groups is an interesting one from the point of view of decidability: for example, while it is known that the word and conjugacy problems are decidable in this context, the decidability of isomorphism is still not known. This is in contrast to the class of polycyclic groups, for example, in which all three problems are known to be decidable. One of the reasons for this discrepancy is that finitely generated metabelian groups can have subgroups which are not themselves finitely generated. Indeed, it is possible for two finitely generated subgroups of a finitely generated metabelian group to intersect in a subgroup that is not itself finitely generated. On the other hand, if we restrict to finitely generated free metabelian groups, such intersections do have a nice "finite description", and it is possible to compute this description. Thus, for finitely generated free metabelian groups, we are able to decide whether the intersection of two finitely generated subgroups is itself finitely generated, and, if so, if it is trivial. This is joint work with Gilbert Baumslag and Chuck Miller. (Received August 08, 2008)